

cm⁻¹ (c) thus being assigned to the conjugated ester and double bond of TBEA in the enol form (see FIG. 1). The spectra in a and b were taken with parallel polarized radiation in the reflection-absorption (RA) mode, at an angle of incidence of 75° and a resolution of 4 cm⁻¹. The spectrum in c was taken in the transmission mode, at the same resolution, using a thin film of pure TBEA between two NaCl windows.

We claim:

1. An electrode for use in electrochemical sensing devices wherein said electrode comprises a non specific electrically conducting metal substrate on which there is a self-assembled monolayer which contains an active species specific component and a blocking surface sealing component.

2. An electrode as claimed in claim 1, where the active component and the sealing component are different compounds.

3. An electrode according to claim 1, where the active species and the sealing properties are provided by the same compound.

4. An electrode according to claim 1, where the active species provides selected access to a specific ion out of a mixture of a plurality of ions in solution, to the immediate vicinity of the conductive substrate.

5. An electrode as claimed in claim 1, where the active species is provided by a molecule-having at its one end a chemical moiety for anchoring to the electrode conducting substrate, and at its other end a chelate forming group.

6. An electrode according to claim 5, where the active species is selected from 2,2'-thiobisethyl acetoacetate and 3,3'-thiobispropyl acetoacetate to form complexes with ions from solution compounds, and which is embedded in a compact electrochemically inert matrix made of n-octadecyl mercaptan, n-octadecyl trichlorosilane, or a naphthol polymer or homologues thereof.

7. An electrode according to claim 5, wherein said active species is a thio acetoacetate substituted with two β-keto ester groups.

8. An electrode according to claim 5, wherein said active species is a compound forming a tetradentate chelating centre and has a sulphur bridge.

9. An electrode according to claim 1 wherein said self-assembled monolayer is a monolayer applied on said substrate by adsorption, chemisorption or electrochemical deposition.

10. An electrode in accordance with claim 1, wherein said active component and said blocking component are provided in said self-assembled monolayer by adsorption, chemisorption or electrochemical deposition of a compound or compounds supplying said active and blocking components.

11. A process for the production of an electrode for use in an electrochemical sensing device comprising, applying on a surface layer by adsorption, chemisorption or electrochemical deposition, either simultaneously or sequentially, an organic monolayer comprising an inert monolayer matrix in which there is embedded synthetic receptor sites adapted to provide ionic specific selectivity.

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